



Illinois Department of Transportation

Memorandum

To: DIRECTORS, DEPUTY DIRECTORS, AND BUREAU CHIEFS
From: Dianna L. Taylor
Bureau Chief of Personnel Management
Subject: Technical Vacancy
Date: September 19, 2016

Attached are the Position Summary Sheet and Position Description for the vacant technical position listed below. Please post this vacancy announcement September 20, 2016 in the designated areas.

The deadline for applicants to submit their names for consideration is **4:30 p.m.** on **Monday, October 3, 2016**. Applicants will not be accepted after that time and date.

NOTE: A copy of each applicant's ACTIVE Illinois Professional Engineer License must accompany application for this position. A copy of each applicant's certification for the following must also be attached: Hot Mix Asphalt and Portland Cement Concrete Quality Control/Quality Assurance Levels I, II & III. Please be advised that if a high volume of applications are received, the applications may be screened to establish a smaller pool of applicants for interview. The screening will be based on the information contained in the application.

All applicants will receive a position description for the position they are applying for. If you have any questions, please contact Jennifer Sunderland or Denise Hamilton at 217/782-5594.

CE VI

Mixtures Control Engineer
Region 1/District 1/Materials
Highways Project Implementation
Schaumburg

Attachments
41044

Technical Applications (PM 1080) **must be received** by the Bureau of Personnel Management, Room 113, 2300 South Dirksen Parkway, Springfield, IL 62764 (Fax# 217/557-3134) or emailed to DOT.CO.BPM.EmploymentApplications@Illinois.gov by **Monday, October 3, 2016, 4:30 p.m.** Please include address, daytime phone and position for which applying if not already listed on application. Applicants will be notified in writing to schedule interviews.

NOTE: A copy of each applicant's ACTIVE Illinois Professional Engineer License must accompany application for this position. A copy of each applicant's certification for the following must also be attached: Hot Mix Asphalt and Portland Cement Concrete Quality Control/Quality Assurance Levels I, II & III. Please be advised that if a high volume of applications are received, the applications may be screened to establish a smaller pool of applicants for interview. The screening will be based on the information contained in the application.



**Illinois Department
of Transportation**

An Equal Opportunity Employer

Position Summary Sheet

Classification: Civil Engineer VI

Salary Range: \$6,945 - \$11,020

Position Title: Mixtures Control Engineer

Union Position: ☒ Yes ☐ No

Position Number: PW116-23-51-703-00-01

IPR#: 41044

Office/Central Bureau/District/Work Address:

Office of Highways Project Implementation/Region One/District One/Bureau of Materials/201 W. Center Ct., Schaumburg IL

Description Of Duties:

This position is accountable for planning, coordinating and directing activities ensure that Hot Mix Asphalt (HMA) and Portland Cement Concrete mixtures meet current Standard Specifications and applicable Special Provisions for use on all U.S. and state-marked routes as well as local projects, where federal, state and Motor Fuel Taxes are involved.

Special Qualifications:

Required:

- A current Illinois Professional Engineer license
- A valid driver's license
- Successful completion of the QC/QA training program for HMA and PCC through Level III
- Districtwide and statewide travel; occasional night and weekend work hours; and overtime

Desired:

- Ten years of experience the practice of civil engineering of which at least six years should be in highway construction, four years of which should have been supervising engineering functions
- Strong oral and written communication skills
- Managerial skills and the ability to resolve conflicts

Shift/Remarks:

8:00 am – 4:15 pm / Monday – Friday (45 minute lunch)

***THIS POSITION IS COVERED UNDER THE REVOLVING DOOR PROHIBITION (RDP) POLICY.**

**ILLINOIS DEPARTMENT OF TRANSPORTATION
POSITION DESCRIPTION**

DATE:	April, 2016	POSITION:	Mixtures Control Engineer
APPROVED BY:	George Houston	OFFICE/DIVISION:	OHPI/Region 1/District 1/Bureau of Materials
CODE:	PW116-23-51-703-00-01	REPORTS TO:	District Materials Bureau Chief

Position Purpose

This position is accountable for the planning, coordinating and directing activities that ensure that bituminous concrete and Portland Cement Concrete mixtures are acceptable for use on state and local highway improvement projects where federal and state aid and Motor Fuel Taxes are involved.

Dimensions

Subordinate Personnel	Direct 6, Indirect 28
Number of Projects Annually	100 - 300
Annual Value of Mixtures	90 - 350 Million
Number of Plants	125 - 150
Number of Construction Consultants	10 - 30 Firms

Nature and Scope

This position reports to the District Materials Engineer as do the Geotechnical Engineer, Quality Assurance Manager and Physical Test Engineer. Reporting to this position are five Area Mixtures Control Supervisors and one Highway Maintainer.

The over 20 billion vehicles miles are travelled annually on the 10,000 lane miles constitute the District's highway network. This makes the function of designing durable Portland Cement Concrete and Hot Mix Asphalt mixtures exceedingly important in terms of highway safety. The existence of a large number of local agencies and the required use of consultants for construction supervision and materials inspection on various types and volumes rehabilitation of Quality Control and Quality Assurance and Pay for Performance projects establishes an unusual need to develop complete understanding of what constitutes acceptable Portland cement and HMA mixtures and placement methods for each product. An effective performance in this position is complicated by the increasing complexity of the mixtures control technology such as new generation of Gyratory Compactors, Thin Lift Nuclear Density Gauges and HMA Wheel Tracker. The candidate will be required to develop Specifications and mix design criteria for sustainable and environmentally friendly Hot Mix Asphalt mixtures as well as a variety of specialty concrete mixtures.

Typical problems encountered in this position include ensuring acceptable mixture designs to improve skid resistant, durability and other properties. This includes safety and wears features of pavement surfaces; approving the design of new mixtures by the contractors and investigating new mixtures containing recycled and manufactured material for replacement of Natural Aggregates. The candidate will be required to develop and monitor the implementation of performance based specifications and Special provisions such as Pay for Performance (PFP) and Quality Control for Performance (QCP). The greatest challenge to this position is to respond effectively to a wide variety of mixtures and usage problems associated with the district's large accelerated program involving projects of high visibility that are particularly sensitive to the political directorate, the media and the motoring public.

The candidate monitors and evaluates the operation of various HMA and PCC production facilities, equipment, and whether these facilities meet Specifications. S/He evaluates the effectiveness of consultant personnel and testing equipment engaged in material testing and inspection for Pay for Performance, Quality Control for Performance, QCP as an improved Quality Control/Quality Assurance Specifications.

Due to the rapid technological developments in the field, this position is constantly confronted with problems of correct interpretation and proper guidance with respect to new material inspection processes and demonstrating to contractors and consultants how these processes will result in the improvement in performance.

The incumbent personally determines whether bituminous and portland cement concrete materials will be used on projects in those instances where questions have been raised as to material acceptability; approves HMA and portland cement concrete mixtures design, to meet unusual projects demands; ensure prompt investigation and resolution of complaints regarding mixture design; approves new types of HMA compacting and manufacturing equipment where rapidly changing technology is occurring; establishes subordinate performance objectives and evaluates performance; determines staff training needs and recommends appropriate action; provides work safety for employees by enforcing departmental safety requirements; investigates safety hazards and eliminates them; and has major input into the Bureau's operating budget.

The incumbent accomplishes and accountabilities through the following personnel:

Area Mixtures Control Supervisor (5), who are responsible for directing and coordinating portland cement concrete and HMA proportioning inspection under the requirement of QC/QA, PFP and QCP Specifications, and conducting an Independent Quality Assurance Program to ensure that all Mixtures produced, tested and documented meet the required Specifications and Special Provisions on all contracts where state, federal and Motor Fuel Taxes are utilized.

Highway Maintainer, who is responsible for picking up concrete and Bituminous test specimens at construction sites and delivering them to the District lab for testing and reporting.

This position is constrained by departmental regulations. The incumbent operates within the guidelines included in the standard specifications but is required to exercise considerable independent technical judgment in designing and establishing appropriate inspection procedures for HMA and Portland Concrete mixtures, in establishing proper HMA density and compaction procedures, and evaluating the impact of substitute materials on the effectiveness of existing mixtures. The incumbent participates in employees' selection, recommends promotions, salary adjustments and disciplinary actions.

The incumbent has frequent contact with the District Bureau of Construction, Bureau of Design, Bureau of Maintenance, Bureau of Local Roads, Bureau of Programming, Bureau of Electrical Operations, and the Office of Quality, to coordinate schedules to ensure the timely and effective reporting of QC/QA and methods specification. Documents various mixtures; The incumbent negotiates the acceptability of special provisions covering unique mixture problems with the Bureau of Design, the Central Bureau of Materials and the FHWA; deals continuously with contractors, consultants, material suppliers and local officials to ensure understanding of guidelines governing conditions of materials acceptability, usage and ensuring the correct application of new technology to materials used under the QC/QA guidelines. Occasional night and weekend work hours are required. Both districtwide and statewide travel is also required.

The effectiveness of this position is measured by pavement life and safety with respect to skid-resisting and wearing capabilities of HMA and Portland Cement mixtures used on improvement projects with timely completion of the various contracts.

Principal Accountabilities

1. Verifies contractor QC/QA plans and designs of HMA and Portland Concrete mixtures that are for use on IDOT projects.
2. Monitors contractor inspection methods, density and compaction procedures that ensure material acceptability on various types of projects.
3. Ensure the correct application of new and revised technology to mixtures used on various projects.
4. Prepares special provisions to cover various mixtures not specified by Standard Specifications that are required for the solution of unusual problems.
5. Determines the acceptability of substitute materials and chemical additives in various Concrete and HMA mixtures.
6. Continues the development of Pay for Performance and Quality Control for Performance Specifications in connection with Quality Control/Quality Assurance applications and monitors the field use of these specifications to ensure their acceptability for project use.
7. Establishes training methods to adequately prepare assigned personnel for field inspection assignments.
8. Provides the direction, counseling, training and motivation of staff so as to ensure a high level of productivity, effective performance, and continuous development for difficult assignments.
9. Reviews Bureau of Designs plans for Mixture Compliance.
10. Performs all duties in compliance with departmental safety rules. Performs all duties in a manner conducive to the fair and equitable treatment of all employees.
11. Performs other duties as assigned.